

Sewer System Management Plan 2025 Update

Ross Valley Sanitary District

(Waste Discharge ID: 2SS010172)

Mission

To provide customers with high quality wastewater collection service, through a system that has no avoidable sanitary sewer overflows, at the lowest sustainable cost, in order to protect public health and the environment.

REVIEWED AND APPROVED BY:

Steve Moore – General Manager
Legally Responsible Official

Sanitary Sewer Collection System
(includes Element Development Plans & Schedules)

PREPARED BY:



June 18, 2025

Date Signed

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Ross Valley Sanitary District
Attn: Steve Moore
General Manager/LRO
1111 Andersen Drive
San Rafael, CA 94901

Dear Steve Moore:

We are pleased to present the new 2025 Sewer System Management Plan (SSMP) Update developed in partnership with Agency management. The 2025 Update meets and exceeds compliance with the Reissued WDR (State Water Board, Water Quality Order No. 2022-0103-DWQ, Attachment D-10 and Specifications 5.4). The 2025 SSMP has been completely revised to harmonize with industry standard guidelines and incorporates the latest SSMP Audit findings.

The 2025 SSMP is a declaration of what the District is doing to demonstrate full compliance with the Reissued WDR. Attachment A of the Reissued WDR (page A-4), states "A sewer system management plan is a living document which requires the District to Enrollee develops and implements to effectively manage its sanitary sewer system(s) in accordance with this General Order." This requires the District to periodically review and update the SSMP as necessary until its next required 6-year SSMP Update is completed.

We look forward to assisting the District wherever necessary to fully implementation its new 2025 SSMP Update.

Sincerely,

James Fischer, P.E.
Principal, Fischer Compliance LLC
Credentialed U.S. EPA NPDES Compliance Inspector



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Introduction

This Sewer System Management Plan (SSMP) or “Plan” has been prepared for the Ross Valley Sanitary District (District) with technical assistance from Fischer Compliance LLC for meeting and exceeding compliance with the State Water Resources Control Board 2022 General Waste Discharge Requirements, Order WQ 2022-0103-DWQ for Sanitary Sewer Systems (referred to throughout this document as the WDR). The District provided all details, information and institutional insights for preparation of the SSMP. The document has been developed to meet the size, scale, and complexity, serving as a “living document” used as a tool for managing and operating the District’s sanitary sewer collection system. Additionally, the latest 2024 Sewer System Management Plan Guidance Manual published by the Bay Area Clean Water Agency (BACWA) was utilized as a model for development of the document to harmonize formatting/content and incorporate recommended suggested guidance wherever possible.

The District’s commitment to meeting or exceeding regulatory requirements, along with their proactive approach to operation and management and implementation of initiatives to improve system performance and reduce spills has served them well as evidenced by downward trends in number of spills, volume of spills and volume of spills that reached surface water over the last ten years

CIWQS Category	2015-2019	2020-2024	Improvement
Number of Spills/Year	26.6	11.8	55%
Volume Spilled/Year	80,759	35,353	56%
Volume Reached Surface Water/Year	52,020	32,270	38%

Data obtained from the State Water Board’s CIWQS database

Figure 1 provides key District spill metrics, including data comparing the District’s spill record (Aug 2009 through April 2025) with state and regional system data.



Collection System Spill Summary

Operational Indices: Ross Valley Sanitary District CS

Spill Rate Index (spills/100mi/yr)							
	Category 1			Category 2		Category 3	
	Main System	Laterals	Other	Main System	Other	Main System	Other
Ross Valley Sanitary District CS	3.48	N/A	0.22	0.71	0.0	6.96	0.31
State Municipal(Public) Average	1.47	N/A	0.43	0.54	0.43	2.81	0.52
Region Municipal Average	2.86	N/A	0.36	0.64	0.22	6.26	0.68

Net Volume Spills Index (gallons/1000 Capita/yr)							
	Category 1			Category 2		Category 3	
	Main System	Laterals	Other	Main System	Other	Main System	Other
Ross Valley Sanitary District CS	4442.7	N/A	138.68	88.64	0.0	39.44	0.98
State Municipal(Public) Average	1496.73	N/A	3111.27	234.04	1950.64	28.18	7.7
Region Municipal Average	764.94	N/A	425.99	76.22	5383.03	58.13	13.99

Introduction: Figure 1 (Collection System Operational Report – SWRCB Integrated Water Quality System (CIWQS))

SSMP Organization

This SSMP is organized into 11 core elements following Attachment D of the WDR, with inclusion of applicable Specifications requirements.

Each individual element in the SSMP includes the following technical contents.

1. Requirements – Provides the actual description of applicable requirements in the WDR.
2. Compliance – Describes the District’s approach to complying with the WDR requirements.
3. Effectiveness – As measured by Key Performance Indicators (KPIs.)
4. Implementation – Demonstrates how the District will ensure the Plan is being carried out as described.
5. Resilience – Demonstrates the resilience that is addressed in the SSMP and built-in to the District’s collection system and procedures.
6. Appendix Inclusions – List the items included in the Appendix for each SSMP Element, if any.

Abbreviations and Acronyms

BMP	Best Management Practices
CCTV	Closed Circuit Television
CIP	Capital Improvement Program
CIPP	Cured in Place Pipe
CIWQS	California Integrated Water Quality System (State Water Board Online Spill Database)
CMMS	Computerized Maintenance Management System
CMSA	Central Marin Sanitation Agency
District	Ross Valley Sanitary District
ENG	Engineering
EPA	US Environmental Protection Agency
FOG	Fats, Oils and Grease
FSE	Food Service Establishment
GCD	Grease Control Device
GIS	Geographic Information System
GM	General Manager
I & I	Inflow and Infiltration
LRO	Legally Responsible Official
MRP	Monitoring and Reporting Program
NPDES	National Pollutant Discharge Elimination System
OMM	Operations and Maintenance Manager
OMS	Operations and Maintenance Superintendent
OPS	Operations Supervisor
RWQCB	Regional Water Quality Control Board (Lahontan Region)
SCADA	Supervisory Control and Data Acquisition
SERP	Spill Emergency Response Plan
SOP	Standard Operating Procedure
SSMP	Sewer System Management Plan
Spill	Sanitary Sewer Spill
WDR	Sanitary Sewer Systems General Wastewater Discharge Requirements Order issued by the State Water Board (Order No. 2022-0103-DWQ)
SWRCB	State Water Resources Control Board
WDID	Waste Discharge ID Number (CIWQS)

Introduction: Table 1 Abbreviations and Acronyms

1. Goal and Introduction

REQUIREMENTS

Att. D-1 (pg. D-2)

“The goal of the Sewer System Management Plan (Plan) is to provide a plan and schedule to: (1) properly manage, operate, and maintain all parts of the Enrollee’s sanitary sewer system(s), (2) reduce and prevent spills, and (3) contain and mitigate spills that do occur.

The Plan must include a narrative Introduction section that discusses the following items (see below):”

1.1. Regulatory Context

WDR REQUIREMENTS

Att. D-1.1 (pg. D-2)

“The Plan Introduction section providing a general description of the local sewer system management program and discuss Plan implementation and updates”.

COMPLIANCE

The District is committed to fully implementing the WDR¹ which includes addressing all requirements by integrating a wide range of programs specifically designed for ensuring the integrity and efficiency of the District’s sanitary sewer collection system. Moreover, the District is dedicated to maintaining its collection system in a systematic and efficient manner by implementing various work programs and initiatives, with a focus on critical areas, to prevent spills, allowing for a comprehensive approach to maintenance. Work programs include, gravity main assessment and cleaning, manhole inspection and rehabilitation, lift station inspection and maintenance, root control, source control easement clearing and pipe repair. Work programs are described in more detail in sections Specifications 5.19 Operation and Maintenance of this Sewer System Management Plan (SSMP.)

By prioritizing proactive measures and taking a comprehensive approach, the District is well-equipped with a proven track record of effectively operating its sanitary sewer collection system with the highest levels of service, complying with the WDR, and reducing/eliminating sewage spills. In addition, the District is committed to continuous improvement and will update the SSMP when upgrades are implemented.

¹ State Water Resources Control Board, Statewide Waster Discharge requirements, General Order for Sanitary Sewer Systems

EFFECTIVENESS

N/A

IMPLEMENTATION PLAN/SCHEDULE

N/A

1.2. SSMP Update Schedule

WDR REQUIREMENTS

Att. D-1.2 (pg. D-3)

“The Plan Introduction section must include a schedule for the Enrollee to update the Plan, including the schedule for conducting internal audits. The schedule must include milestones for incorporation of activities addressing prevention of sewer spills.”

COMPLIANCE

The District utilizes the State Water Board’s online lookup tool for ensuring all required due dates for updating its SSMP and completing its required SSMP Audits (see chart below).

The District’s most recent SSMP audit was completed for the period 2022 through 2024.

Notable maintenance milestones include CCTV Inspections and manhole inspections on 12-, 8-, and 4-year intervals; Performance-based gravity main cleaning on 1-to-8-year intervals, and performance-based Hot Spot cleaning on 6-to-12-month intervals.

Sewer System Management Plan and Subsequent Update Due Dates						
System Name	WDID Number	Original Plan Required Due Date	Required Plan Update Due Date			
Ross Valley Sanitary District	2SSO10172	8/2/2009	8/2/2014	8/2/2019	8/2/2025	8/2/2031

Audit Due Dates									
System Name	WDID Number	Original Required Plan Audit Due Date	End of Required 3-year Audit Period **	End of Required 3-year Audit Period **					
Ross Valley Sanitary District	2SSO10172	8/2/2011	8/2/2013	8/2/2015	8/2/2017	8/2/2019	8/2/2021	8/2/2024	8/2/2027

** The Audit is due to be submitted to CIWQS six months after end of Audit Period, 2/2/25 and 2/2/28)

Figure 1-1– Sewer System Management Plan, Subsequent Update and Audit Due Dates

EFFECTIVENESS

The District utilizes the following Key Performance Indicators for measuring effectiveness of this Element:

1. Are SSMP Audits and SSMP Updates being performed as scheduled?
2. Has the Sewer System Management Plan been approved by the governing board on schedule (every six years)?
3. Are specific internally established sewer program milestones being monitored?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party			
			GM	OMM	OMS	ENG
1.2.1	Prepare for next SSMP Audit	Begin 8/2/2027	X	X	X	X
1.2.2	Complete and Upload next SSMP Audit	By 2/2/2028	X	X		
1.2.3	Incorporate Audit Findings, update Change Log and Update SSMP	Begin after completion of SSMP Audit	X	X		
1.2.4	Prepare for next SSMP Audit	Begin 8/2/2030	X	X	X	X
1.2.5	Complete and Upload next SSMP Audit	By 2/2/2031	X	X		
1.2.6	Incorporate Audit Findings, update Change Log and Update SSMP	Begin after completion of SSMP Audit	X	X		
1.2.7	Prepare for next SSMP Update	Begin 2/2/2031	X	X	X	X
1.2.8	Board Approval deadline for SSMP Update*	By 8/2/2031	X	X		

1.3. Sewer System Asset Overview

WDR REQUIREMENTS

Att. D-1.3 (pg. D-3)

“The Plan Introduction section must provide a description of the Enrollee-owned assets and service area, including but not limited to:

- Location, including county(ies).*
 - Service area boundary.*
 - Population and community served.*
 - System size, including total length in miles, length of gravity mainlines, length of pressurized (force) mains, and number of pump stations and siphons.*
 - Structures diverting stormwater to the sewer system.*
 - Data management systems.*
 - Sewer system ownership and operation responsibilities between Enrollee and private entities for upper and lower sewer laterals.*
 - Estimated number or percentage of residential, commercial, and industrial service connections; and*
 - Unique service boundary conditions and challenge(s).*
- Additionally, the Plan Introduction section must provide reference to the Enrollee’s up-to-date map of its sanitary sewer system, as required in section 4.1 (Updated Map of Sanitary Sewer System) of this Attachment.”*

COMPLIANCE

The Ross Valley Sanitary District (District) was established in 1899 and is believed to be California’s oldest sanitary district. The District is in Marin County, approximately 15 miles north of San Francisco and directly south and west of the City of San Rafael. The service area is bounded on the east by the San Francisco Bay, and on the west by the coastal hills. See figure 1-2, below.

The District provides collection wastewater services Fairfax, San Anselmo, Ross, Larkspur, Bon Air, Sleepy Hollow, Kentfield, Kent Woodlands, Oak Manor and Greenbrae, with an approximate population of 47,712.

The District’s collection system consists of 199 miles of gravity mains, 7 miles of force mains, 19 pump stations and 31 siphons. The system does not include storm water Diversion Structures. Laterals, both lower and upper, and the connection fitting to the sewer main, are owned and maintained by the individual private property owners.

There are a total of 15,451 lateral connections to the system. Connection Classification is as follows:

Classification	Number or % of Connections
Residential	14,676 (94.98%)
Commercial and Institutional	775 (5.02%)

Table 1-1 – District sewer connection flow classifications and connections data

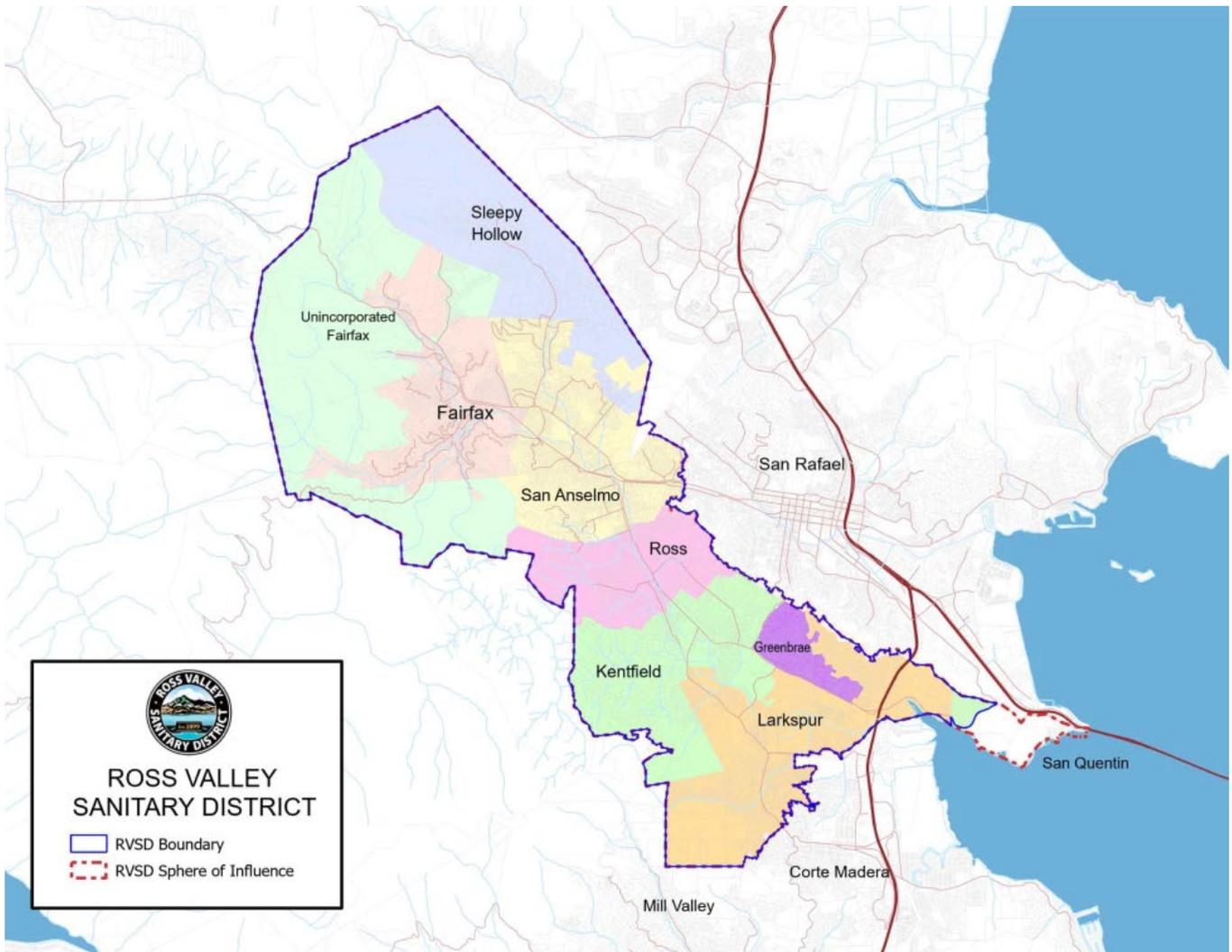


Figure 1-2 – District Vicinity Map and Service Area

The District manages system assets utilizing Innowyze® InfoAsset Manager™ for work orders and ArcGIS Enterprise for asset data.

The District service area includes several unique operational challenges.

The installation of the collection system began in 1899, so portions of it were not installed to current industry design standards. The District has 32,000-feet (225[±]-segments) of 4-inch gravity mains, of which a large amount is cast iron pipe. Sixty-six percent of the system’s pipe is less than or equal to 6-inch diameter.

These small diameter pipes are more susceptible to blockages, more difficult to maintain and more difficult to rehabilitate using current methods and technologies, especially trenchless options.

Thirty-three percent of the collection system is located on private property, which creates access issues for maintenance activities. All routine work requires advanced communication and coordination with property owners, which can sometimes take weeks to accomplish. Through its easement initiative the District is continuously making efforts to obtain contact information from property owners to mitigate this challenge, including a user-friendly interface on the District's website under "Customer Service" and "[Sewer Utility Easements](#)", as well as periodic outreach to those parcels. The hydro and CCTV units, in some cases, must be set up a good distance from the manhole and field staff must physically pull the equipment (camera & cable and nozzle & hose) to the manhole. Everything needed to perform repair work must be hauled in and out by hand. These circumstances do not prevent the District from completing these tasks, but it does take considerably more time and resources to complete.

There is a 1500-foot section of sewer pipe in the Boardwalk area in Larkspur that is located within a marsh and is not accessible with vehicles and equipment. Maintenance activities require additional staff. CCTV inspections are performed with push cameras, inspecting small sections at a time. Cleaning efforts require remote set up with the vehicles and equipment and manual efforts by field staff to complete tasks. Laterals connected to these pipes are susceptible to Lateral Blowback, which inhibits cleaning efforts, requiring more time to complete tasks. In addition, the marsh creates an unstable bedding for the pipes, which makes repair work a challenge.

Many of the public streets and roads within the service area are extremely narrow with tight turns that makes it difficult to navigate vehicles, even if there are no parked cars along the sides. This creates a challenge for scheduled activities and can inhibit emergency response activities.

System-wide the District has identified approximately 120 parcels that will experience lateral blowback during hydro-cleaning operations and an additional 150^{+/-} properties where the resident requires advanced notice of maintenance activities. These two circumstances significantly impact the time and effort required to complete maintenance tasks.

The District continuously strives to properly manage the collection system while maintaining its good standing with the residents and business owners within the communities served.

The District maintains up to date system maps. See Element 4.1 - Updated Map of Sanitary Sewer System maps for more detail.

EFFECTIVENESS

The District utilizes the following Key Performance Indicators for measuring effectiveness of this Element:

- Are asset statistics periodically reviewed and updated as necessary?
- Are omissions or errors addressed in a timely manner?
- Are system maps up to date?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party			
			GM	OMM	OMS	ENG
1.3.1	Review District-owned asset statistics and element description; update as necessary	At the beginning of the audit cycle and when significant changes have been made.		X	X	
1.3.2	Update Maps	Within 6 months of Completed Asset Modifications or Additions		X		X

RESILIENCE

Resilience is addressed for Element 1 by:

- Adhering to an SOP for collecting and managing asset data.
- Redundancy: More than one member of staff is trained and able to retrieve and manage the data.
- Implementing a QA/QC process to help ensure information is accurate.
- Using Calendar Reminders to ensure compliance deadlines are met.

APPENDIX 1 INCLUSIONS:

- None

Specifications 5.2 – SSMP Development and Implementation

WDR REQUIREMENTS

Spec. 5.2 (pg. 18)

“To facilitate adequate local funding and management of its sanitary sewer system(s), the District shall develop and implement an updated Sewer System Management Plan. The scale and complexity of the Sewer System Management Plan, and specific elements of The SSMP, must match the size, scale, and complexity of the Enrollee’s sanitary sewer system(s). The Sewer System Management Plan must address, at minimum, the required Plan elements in Attachment D (Sewer System Management Plan – Required Elements) of this General Order. To be effective, the Sewer System Management Plan must include procedures for the management, operation, and maintenance of the sanitary sewer system(s). The procedures must: (1) incorporate the prioritization of system repairs and maintenance to proactively prevent spills, and (2) address the implementation of current standard industry practices through available equipment, technologies, and strategies.”

COMPLIANCE

This SSMP has been updated to meet the requirements of Order WQ 2022-0103-DWQ and addresses all required Elements and Specifications required by the Reissued WDR (Order No. 2022-0103-DWQ). The SSMP addresses management, operations and maintenance procedures specific to the District’s collection system. The District maintains a proactive O&M program to operate its system and identify defects, which are then prioritized for repair, replacement, rehabilitation, or placed on modified maintenance schedules. (See Elements 4 and 8 and Specifications 5.19 of this SSMP for more detail).

The District keeps up with current industry standards, technology and best practices by subscribing and reviewing industry periodicals, networking with JPA and mutual aid agencies in Marin County, attending and presenting at industry conferences and workshops (CASA, WEF, CWEA, DKF Solutions, etc.), through training from outside providers and through a network of vendors who introduce the latest equipment and technology. The District is active in Baywork, a consortium of water and wastewater agencies in the Bay Area focused on workforce development.

The District continuously evaluates emerging practices, equipment and technologies for possible implementation to enhance operations.

Specifications 5.7 – Allocation of Resources

WDR REQUIREMENTS

Spec. 5.7 (pg. 22)

“The Agency shall comply with the following requirements:

- *Establish and maintain a means to manage all necessary revenues and expenditures related to the sanitary sewer system; and*
- *Allocate the necessary resources to its sewer system management program for: (a) compliance with this General Order, (b) full implementation of its updated SSMP, (c) system operation, maintenance, and repair, and (d) spill responses.”*

COMPLIANCE

The District maintains various revenue sources to maintain financial stability, meet its operational needs and manage all necessary expenditures for its sewer system operation. Sources of revenue include:

Sewer Service charges, collected semi-annually via the property tax bill for residential customers. Commercial and institutional customers are billed directly. This accounts for approximately 75% of all revenue. This revenue is used for collection system operations, capital projects and treatment.

The District conducts a sewer rate study every five years and adopts five-year rate schedules for sewer service charges designed to pay for anticipated operations and maintenance (O&M) and capital programs, as well as treatment costs.

Ad Valorem property tax revenue accounts for approximately 20% of revenue. This money comes without restrictions and is generally used to finance the District’s Capital program, Lateral Grant and Loan program, and the Low-Income Assistance program.

Capacity Charges are collected from developers and those that connect to the system. A portion of these funds are designated for the treatment plant infrastructure while a smaller portion is for discretionary use by the District.

The District is adequately staffed and owns the necessary vehicles and equipment to properly manage the collection system.

Provisions 6.1 - Enforcement Provisions

WDR REQUIREMENTS

Provisions 6.1 (pg. 27)

“The following enforcement provisions are based on existing federal and state regulations, laws and policies, including the federal Clean Water Act, the state Water Code and the State Water Board Enforcement Policy.”

COMPLIANCE

The District is aware of the consequences for noncompliance including associated penalties for violations. The District maintains a proactive stance with full implementation of its SSMP.

Noncompliance with requirements of this General Order or discharging sewage without enrolling in this General Order constitutes a violation of the Water Code and a potential violation of the Clean Water Act and is grounds for an enforcement action by the State Water Board or the applicable Regional Water Board. Failure to comply with the notification, monitoring, inspection, entry, reporting, and recordkeeping requirements may subject the Enrollee to administrative civil liabilities of up to \$10,000 a day per violation pursuant to Water Code section 13385; up to \$1,000 a day per violation pursuant to Water Code section 13268; or referral to the Attorney General for judicial civil enforcement. Discharging waste not in compliance with the requirements of this General Order or the Clean Water Act may subject the Enrollee to administrative civil liabilities up to \$10,000 a day per violation and additional liability up to \$10 per gallon of discharge not cleaned up after the first 1,000 gallons of discharge; up to \$5,000 a day per violation pursuant to Water Code section 13350 or up to \$20 per gallon of waste discharged; or referral to the Attorney General for judicial civil enforcement.

Provisions 6.3 Sewer System Management Plan Availability

WDR REQUIREMENTS

Provisions 6.3

“The Enrollee’s updated Sewer System Management Plan must be maintained for public inspection at the Enrollee’s offices and facilities and must be available to the public through CIWQS and/or on the Enrollee’s website, in accordance with section 3.8 (Sewer System Management Plan Reporting Requirements) of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of this General Order.”

COMPLIANCE

The District has loaded this SSMP to the CIWQS database, as required, and publishes it on its website under “Open Government” and makes it available for public review at the District offices, by appointment, during regular business hours.

2. Organization

WDR REQUIREMENTS

Att. D-2 (pg. D-3)

“The Plan must identify organizational staffing responsible and integral for implementing the local Sewer System Management Plan through an organization chart or similar narrative documentation that includes:

- *The name of the Legally Responsible Official as required in section 5.1 (Designation of a Legally Responsible Official) of this General Order.*
- *The position titles, telephone numbers, and email addresses for management, administrative, and maintenance positions responsible for implementing specific Sewer System Management Plan Elements.*
- *Organizational lines of authority.*
- *Chain of communication for reporting spills from receipt of complaint or other information, including the person responsible for reporting spills to the State and Regional Water Boards and other agencies, as applicable. (For example, county health officer, county environmental health agency, and State Office of emergency Services.)*

COMPLIANCE

The above items are addressed in the order below:

The District’s Legally Responsible Officials (LRO) are listed below:

- | | |
|--|--------------|
| • Steve Moore, General Manager. | 415-870-9764 |
| • Paul Bruemmer, Operations and Maintenance Manager. | 415-870-9769 |
| • Josh Hill, Operations and Maintenance Superintendent. | 415-870-9767 |
| • Kevin Lewis, Operation and Maintenance Superintendent. | 415-870-9763 |

All meet the requirements set forth in Specifications 5.1 of the WDR (WQ-2022 0103-DWQ).

IMPLEMENTATION RESPONSIBILITIES

Sewer System Management Plan Elements	Responsible Position
1. SSMP Plan, Goal and Introduction	Steve Moore
1.1. Regulatory Context	Steve Moore
1.2. SSMP Update Schedule	Paul Bruemmer
1.3. Sewer System Asset Overview	Steve Moore
2. Organization	Steve Moore
3. Legal Authority	Steve Moore
4. Operations and Maintenance Program	Paul Bruemmer
4.1. Updated maps of Sanitary Sewer System	Patrick Filipelli
4.2. Preventive Operation & Maintenance	Paul Bruemmer
4.3. Training	Josh Hill
4.4. Equipment Inventory	Kevin Lewis
5. Design/Performance	Steve Moore
5.1. Updated Design Criteria & Construction Standards	Phil Benedetti
5.2. Procedures and Standards	Phil Benedetti
6. Spill Emergency Response Plan	Paul Bruemmer
7. Sewer Pipe Blockage Program	Paul Bruemmer (Lead) / Steve Moore
8. System Eval, Capacity Assurance, Capital Imp.	Steve Moore (Lead) / Phil Benedetti
8.1. System Evaluation and Condition Assessment	Steve Moore (Lead) / Phil Benedetti
8.2. Capacity Assessment and Design Criteria	Steve Moore (Lead) / Phil Benedetti
8.3. Prioritization of Corrective Action	Steve Moore (Lead) / Phil Benedetti
8.4. Capital Improvement Plan	Steve Moore (Lead) / Phil Benedetti
9. Monitoring, Measurement & Program Modifications	Patrick Filipelli (Lead) / Paul Bruemmer
10. Internal Audits	Paul Bruemmer
11. Communication Program	Steve Moore

Table 2-1 – Implementation Responsibilities

RESPONSIBLE POSITION CONTACT INFORMATION

Responsible Position Contact Information	Phone	Email
Steve Moore	415-870-9764	smoore@rvsd.org
Paul Bruemmer	415-870-9769	pbruemmer@rvsd.org
Patrick Filipelli	415-870-9772	pfilipelli@rvsd.org
Phil Benedetti	415-870-9771	pbenedetti@rvsd.org
Josh Hill	415-870-9767	jhill@rvsd.org
Kevin Lewis	415-870-9763	klewis@rvsd.org

Table 2-2 – Responsible Position Contact Information

2.1. Organizational Lines of Authority

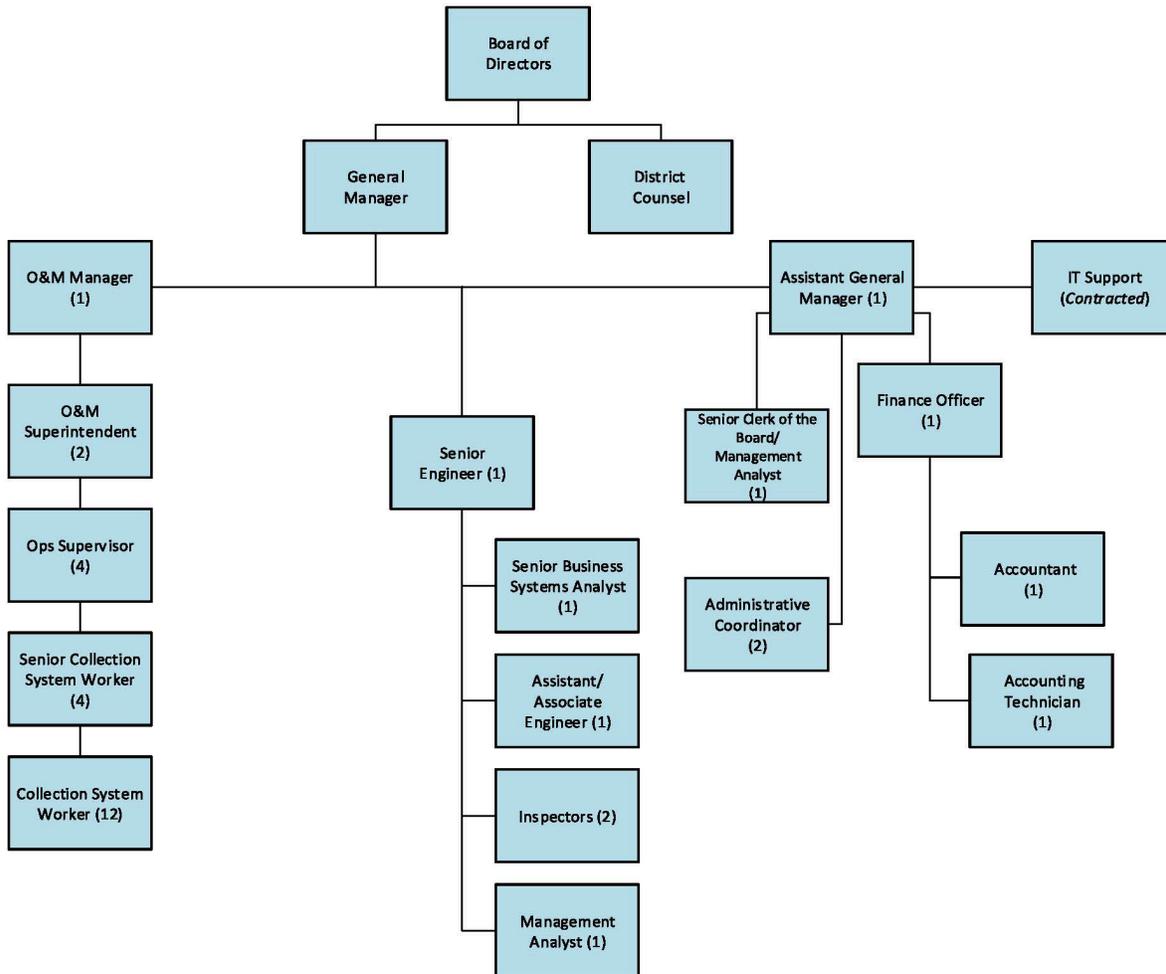


Figure 2-1 - Organization Chart

2.2. Organizational Staffing Responsibilities

General Manager (LRO)

The position serves under the direction and supervision of the District Board of Directors. The position plans and manages the affairs of the District and directs staff in all functions and operations. The General Manager represents Board policy and programs with employees, community organizations, and the general public. The General Manager serves as the District Engineer and directs the engineering activities of the District. The position reviews all budget requests and makes recommendations to the Board on final expenditure levels; manages all labor/management activities; and performs all related work as required.

Operation and Maintenance Manager (LRO)

Under the general direction of the General Manager, the Operations and Maintenance Manager (O&M Manager) is responsible for managing the daily operations of the District wastewater collection and conveyance system, maintenance on infrastructure such as cleaning of gravity lines, operation and maintenance of pump, inspection and testing of air valve assemblies, customer service calls requiring field personnel response, of the Operations and Maintenance department.

Business Systems Analyst (Data Submitter)

Under direction, the Business Systems Analyst performs professional level work in the analysis, design, programming, testing, installation, implementation and maintenance of business applications systems, databases as well as overseeing the Computer Maintenance Management System (CMMS) and Geographic Information System (GIS).

Operation and Maintenance Superintendent (LRO)

Under the general direction of the Operations and Maintenance Manager, the Operations and Maintenance Superintendent is responsible for planning, organizing, and directing maintenance and operations activities associated with the District's wastewater collection and conveyance system, facilities, and fleet, and, as directed, for administering the safety program for all employees.

Operations Supervisor (Data Submitter)

Under general direction, the Operations Supervisor coordinates and supervises an assigned field crew performing inspection work on District's wastewater collection system to ensure that construction and maintenance tasks and projects are assigned, monitored, and completed; and performs related work as required.

Senior Collection System Worker (First Responder)

Under direction, performs a variety of skilled - journey level work and manual labor in the operations, maintenance, and repair of sewer lines and related mechanical, hydraulic and hand- operated equipment; and demonstrates a

full understanding of all applicable policies, procedures, and work methods associated with assigned duties; performs other related duties as required.

Collection System Worker I/II (First Responder)

Under general supervision of the Supervisor performs a variety of skilled - journey level work and manual labor in the operations, maintenance, and repair of sewer lines and related mechanical, hydraulic and hand-operated equipment; learns and demonstrates a full understanding of all applicable policies, procedures, and work methods associated with assigned duties; performs other related duties as required.

Senior Engineer (Data Submitter)

Under direction from the General Manager, the Senior Engineer plans, organizes, directs and supervises technical and professional civil engineering work including project management, construction management, design work, inspections and other engineering and technical services for the District; manages the more complex projects; and performs related work as required.

Inspector (First Responder)

Under general supervision of the Senior Engineer, the Inspector performs advanced, complex, and critical inspections and completes mapping requests. Working independently with minimal oversight, the Inspector is responsible for ensuring compliance with District regulations and codes related to repair of District infrastructure and constructions of private sewers, collection system pumping stations and related appurtenances, and for ensuring that safety measures are applied at job sites; performs other related duties as required.

2.3. Chain of Communication for Reporting Spills

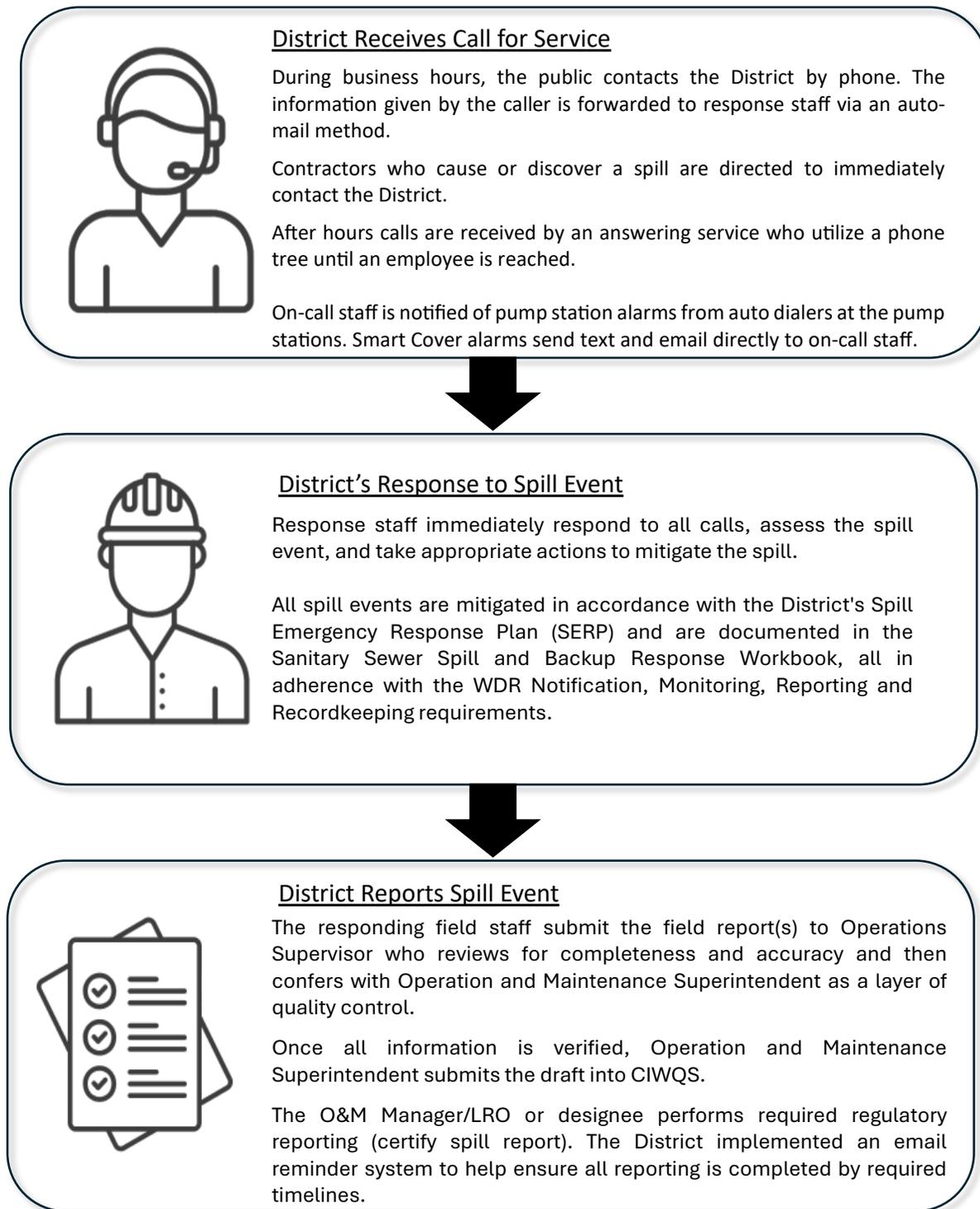


Figure 2-1 – Chain of Communication for Reporting Spills

EFFECTIVENESS

The District utilizes the following Key Performance Indicators for measuring effectiveness of this Element:

1. Have there been any changes requiring updates to the Organizational Chart?
2. Have there been instances when a service call for a spill was not properly routed to response personnel?
3. Were all spill response activities documented and forwarded to the LRO?
4. Have there been any changes in assigned responsibilities for implementing the Sewer System Management Plan?
5. Is there a process in place to ensure all contact information remains up to date?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party			
			GM	OMM	OMS	ENG
2.1	Review names, contact information and position responsibilities. Update as necessary.	Semi-Annually		X	X	
2.2	Review Chain of Communication outcomes for all spill responses	Each Spill Event		X	X	
2.3	Review Organizational Chart for any changes. Update as necessary.	Semi-Annually	X	X	X	

RESILIENCE

Resilience is addressed for Element 2 by:

- Ensuring that more than one person is capable and responsible for specific duties for Sewer System Management Plan implementation, e.g., back-up personnel.
- Designation of more than one LRO to help ensure full and continuous coverage of duties.
- Testing the phone notification system to ensure calls are received and routed to appropriate personnel.

APPENDIX 2 INCLUSIONS:

- None

3. Legal Authority

WDR REQUIREMENTS

Att. D-3 (pg. D-4)

“The Plan must include copies or an electronic link to the Enrollee’s current sewer system use ordinances, service agreements and/or other legally binding procedures to demonstrate the Enrollee possesses the necessary legal authority to:

- *Prevent illicit discharges into its sanitary sewer system from inflow and infiltration (I&I); unauthorized stormwater; chemical dumping; unauthorized debris; roots; fats, oils, and grease; and trash, including rags and other debris that may cause blockages.*
- *Collaborate with storm sewer agencies to coordinate emergency spill responses, ensure access to storm sewer systems during spill events, and prevent unintentional cross connections of sanitary sewer infrastructure to storm sewer infrastructure.*
- *Require that sewer system components and connections be properly designed and constructed.*
- *Ensure access for maintenance, inspection, and/or repairs for portions of the service lateral owned and/or operated by the Enrollee.*
- *Enforce any violation of its sewer ordinances, service agreements, or other legally binding procedures; and*
- *Obtain easement accessibility agreements for locations requiring sewer system operations and maintenance, as applicable.*

COMPLIANCE

The above items are addressed in order below. Refer to [Sanitary Code - Ordinance No. 26 - Use of Public Sewer](#) for more detail.

- a. Illicit Discharges - The District’s Sanitary Code Article VI, Sections 601 and 602 address prohibited discharges to the District’s sanitary sewers.
- b. Collaboration and Coordination with Storm Drain Agencies – The District serves 6 different jurisdictions, each responsible for the storm drain systems, each fully allow the District to operate within their systems. All storm drain maps are available to the District through the ArcGIS mapping software which incorporated Marin Maps data from storm drain agencies. Historically, the District has responded to spill events that impacted a storm drain system by accessing and cleaning the system and then notify the owner of the event. The District is pursuing more formal agreements with storm drain owners to better comply with this requirement.
- c. Proper Design – Sanitary Code, Article V, Public Sewer Construction include the rules and regulations of the District with respect to the construction of sanitary sewerage facilities. The District’s [Standard-Specifications-and-Drawings](#) provides the specific details for the design and installation of sewer system components and connections.
- d. Access to Laterals. This requirement does not apply to the District, as the laterals, upper and lower, and the connection fitting to the District’s gravity main are privately owned. The District does have

the authority to access the lateral for inspections and right of entry authority for necessary District activities. See [Ordinance-100](#), , Sections 7 through 13.

- e. Enforce Violations – Sanitary Code, Article VIII, Section 801 provides the District the legal authority to enforce violations of the Sanitary Code and other ordinances, rules or regulations of the District.
- f. Easement Accessibility - Sewer easements provide the District the legal right of use and access to any of its facilities, equipment or assets that are located on private property in order to maintain the sewer system. Sewer easements are either explicitly recorded as encumbrances on private property or prescriptive easements. Legal right of access applies in both cases. [Ordinance-100](#), Section 8 addresses right of entry by the District.

EFFECTIVENESS

The District utilizes the following Key Performance Indicators for measuring effectiveness of this Element:

1. Are the District ordinances and standards adequate for fulfilling the Sewer System Management Plan legal requirements?
2. Does the District have a process in place for periodic review and evaluation of ordinances?
3. Have there been instances when the code or ordinance did not address a need or circumstance?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party			
			GM	OMM	OMS	ENG
3.1	Review Ordinance to confirm all documents provide necessary required legal authority.	Once per 6-year SSMP Update Cycle	X	X		
3.2	Confer with storm drain owners to ensure current practices and contact information are up to date.	Annually			X	
3.3	Monitor and Document occasions when ordinance(s) failed to address issues as intended.	Continuously	X	X	X	X

RESILIENCE

Resilience is addressed for Element 3 by:

- Keeping abreast of industry trends and local ordinances that may affect operations.

APPENDIX 3 INCLUSIONS:

- None

4. Operation and Maintenance Program

The Plan must include the items listed below that are appropriate and applicable to the Enrollee's system.

4.1. Updated Map of Sewer System

WDR REQUIREMENTS

Att. D-4 (pg. D-4)

"An up-to-date map(s) of the sanitary sewer system, and procedures for maintaining and providing State and Regional Water Board staff access to the map(s). The map(s) must show gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities within the sewer system service area boundaries."

COMPLIANCE

The District maintains a GIS system and Computerized Maintenance Management System (CMMS) that uses the InfoAsset program for mapping and work orders. Maps include manholes, rodholes and other nodes with identifying number, pipe diameters and materials, pump stations, force mains, valve boxes, street names, and parcel addresses with linked lateral cards where available. Storm drain maps, provided by Marin Map for all jurisdictions served by the District, are overlaid on the District's GIS maps.

The District has a procedure for field staff to provide suggested revisions to the system maps. Corrections are made to maps in the GIS system by Engineering staff when edits are provided by the field staff. The District employs a quality assurance process to verify and approve suggested changes.

Upon acceptance by the District of all new and dedicated infrastructure, record drawings are provided to the District for inclusion in the GIS and sewer maps. Changes or additions to infrastructure as a result of capital improvement projects are also reflected in map updates.

Upon request, the District will provide State and Regional Water Board staff a link to system maps. In addition, system maps are available via the Customer Service tab, Sewer Utility Easement web page, [Parcel Search Map](#).

EFFECTIVENESS

The District utilizes the following Key Performance Indicators for measuring effectiveness of this Element:

- Were all map updates completed in a timely manner?
- Are all staff trained in the procedure for providing map update information?
- Are newly installed sewer assets incorporated into the system maps?
- Are there terrain features or assets that should be incorporated in future map updates (e.g. exposed pipe, siphons, ARVs, surface water, etc.)

IMPLEMENTATION PLAN/SCHEDULE

No	Plan	Schedule	Responsible Party			
			GM	OMM	OMS	ENG
4.1.1	Review map update procedures with all affected staff.	Annually		X	X	
4.1.2	Review/ensure all newly installed facilities have been updated and included in the system maps	Annually	X	X	X	X

4.2. Preventive Operation and Maintenance Activities

WDR REQUIREMENTS

Att. D-4 (pgs. D-4/D-5)

A scheduling system and a data collection system for preventive operation and maintenance activities conducted by staff and contractors. The scheduling system must include:

- *Inspection and maintenance activities.*
- *Higher-frequency inspections and maintenance of known problem areas, including areas with tree root problems.*
- *Regular visual and closed-circuit television (CCTV) inspections of manholes and sewer pipes.*

The data collection system must document data from system inspection and maintenance activities, including system areas/components prone to root-intrusion potentially resulting in system backup and/or failure.

COMPLIANCE

The purpose of a work order system is to program and track all required inspection and maintenance activities within the collection system to help proactively prevent blockages/operational problems and spills. District uses the Innovyze® InfoAsset Manager™ Computerized Maintenance Management System (CMMS), which allows the District to make informed decisions regarding its assets and infrastructure by using the collected data from field work orders and documented inspections. This is linked to Esri ArcGIS (geographic information system) which allows for geospatial work planning and prioritization in a constantly-updated sewer system map.

The District's CMMS maintains historical data for all maintenance activities and provides a basis for critical analysis and data-driven planning and decision-making today and into the future. This allows for prioritizing and planning routine activities such as CCTV inspections, line cleaning, repair, and pump station maintenance activities.

In addition, the CMMS is used to plan and schedule higher-frequency inspection and maintenance activities such as Hot Spot cleaning and root control activities. Work orders are initiated by staff, rather than the automated approach through the CMMS. This is done to help ensure advanced notice is provided to customers of pending work that might impact them. The District maintains a Flushing Map in ArcGIS that

tracks the progress of cleaning crews and serves as a quality assurance feature to monitor for overdue line segments.

Staff utilize a supervisor review function integrated within the CMMS to notify supervisory staff of field observations in need of immediate response such as heavy roots , grease, pipeline breaks/ voids or debris such as heavy grit or rock. Emergency and other reactive activities are documented in work orders as well.

EFFECTIVENESS

The District utilizes the following Key Performance Indicators for measuring effectiveness of this Element:

- Is the District maintenance, operations, engineering work orders periodically audited for accuracy and completeness?
- Does the District monitor “open,” “overdue,” or “not yet completed” work orders to ensure completion of tasks?
- Are inspection and maintenance activities reducing the number and volume of spills?
- Is maintenance work being completed as scheduled?
- Critical issues are reported utilizing the Districts Supervisor review function within the CMMS for immediate review and response

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party			
			GM	OMM	OMS	ENG
4.2.1	Monitor “Past Due” work orders to ensure critical work is being completed	Quarterly		X	X	
4.2.2	Review scheduled PMs to ensure the prescribed schedule remains appropriate.	Annually		X	X	

4.3. Training

WDR REQUIREMENTS

Att. D-4 (pg. D-5)

In-house and external training provided on a regular basis for sanitary sewer system operations and maintenance staff and contractors. The training must cover:

- *The requirements of this General Order.*
- *The Enrollee's Spill Emergency Response Plan procedures and practice drills.*
- *Skilled estimation of spill volume for field operators; and*
- *Electronic CIWQS reporting procedures for staff submitting data.*

COMPLIANCE

The District's training program covers several areas involving or associated with wastewater collection systems and serves to develop and maintain highly qualified, knowledgeable, and capable staff. This training is provided through a variety of modes (self-study, seminars, conferences, on-the-job, etc.) and begins from the first day on the job and continues regularly thereafter. Standard Operating Procedures (SOPs) provide the basis for much of the District training.

Staff involved in responding to customer service calls, including sewage spills, receive annual training on the District's Spill Emergency Response Plan. This training is part classroom and part hands-on exercises and scenario-based drills for responding to spill events and includes containment, restoring flow, spill volume, volume recovered, and spill start time estimations, clean up and completing the spill event data collection forms. Training is provided by in-house supervisory staff that have been qualified to provide overflow training.

Data Submitters and Legally Responsible officials will receive additional training from an external training resource. This training involves classroom and practical/scenario-based training. Both actual and hypothetical overflow scenarios are used to provide participants a wide variety of overflow scenarios.

The District requires contractors working on its wastewater collection system to have been trained on the District's Spill Response Requirements for Contractors form. This includes:

- Immediately notify the District of any sewage spill they encounter.
- Make attempts to contain and recover the spill.
- Cordon off the area to keep the public safe.
- Provide video and photo Documentation
- Remain onsite until District staff arrives and relieves them.

These procedures shall be discussed regularly, and especially at the pre-construction conference at the start of a project.

EFFECTIVENESS

The District utilizes the following Key Performance Indicators for measuring effectiveness of this Element:

- Has all training been completed as scheduled?
- Have records of training and attendance been documented and maintained?
- Have all staff demonstrated ability and knowledge after each training event?
- Have contractors received, at a minimum, direction for reporting and responding to spills.

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party			
			GM	OMM	OMS	ENG
4.3.1	Review training documentation to ensure all staff have received required training	Quarterly		X	X	
4.3.2	Review agreements with contractors and/or Pre-Job meeting minutes to ensure contract personnel have received instruction for responding to sewage spills	Each Contract		X	X	X

4.4. Equipment Inventory

WDR REQUIREMENTS

Att. D-4 (pg. D-5)

An inventory of sewer system equipment, including the identification of critical replacement and spare parts.

COMPLIANCE

The District has equipment available for regular maintenance and repairs, and to respond to spill events. The list of the District’s equipment and spare parts is maintained and periodically updated in the asset management system and includes storage location, spare parts deemed as “critical,” and quantities of each item. This is available to staff in the field. In addition, the District has a list of contractors that can be contacted during a spill event to provide a variety of services including private residence cleaning, force main and pipeline repairs, welding, diesel fuel, and tank trucks.

EFFECTIVENESS

The District utilizes the following Key Performance Indicators for measuring effectiveness of this Element:

- Have inventory lists been audited as scheduled?
- Have any inventory deficiencies or omissions been discovered and rectified?
- Has the District experienced any equipment failure that inhibited a spill response?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party			
			GM	OMM	OMS	ENG
4.4.1	Audit inventory lists to ensure stock is adequate	Annually		X	X	
4.4.2	Check with vendors to ensure critical parts lead times are as expected.	Annually		X	X	
4.2.3	Ensure contracts with emergency support services are current	Annually			X	

RESILIENCE

Resilience is addressed for Element 4 by:

- Developing an SOP for updating maps when errors are discovered.
- Developing and using forms (paper or electronic) for data collection to help ensure all pertinent information is consistently collected.
- Periodically evaluating inspection cycle intervals to help ensure they are optimized.

OPERATIONS AND MAINTENANCE PROGRAM

- Requiring staff to demonstrate ability and/or knowledge for all training activities.
- Monitoring equipment and critical spare parts usage for and trends.
- Performing periodic audits of the Vehicle and Equipment Inventory List.

APPENDIX 4 INCLUSIONS:

- None

Specifications 5.19 - Operations and Maintenance

WDR REQUIREMENTS

Spec. 5.19 (pg. 27)

To prevent discharges to the environment, the Enrollee shall maintain in good working order, and operate as designed, any facility or treatment and control system designed to contain sewage and convey it to a treatment plant.

COMPLIANCE

Gravity Main Cleaning - The District uses a targeted approach and cleans the majority of the sewer system approximately every 1 to 8 years and cleans specific portions of the system with known problems on a more frequent basis. The District cleans mainline sewer pipe segments in its wastewater collection system using in-house staff. In addition to the CMMS, District staff utilize ArcGIS based mapping system (pipe clean dashboard) to track staff progress of scheduled line cleaning. The mapping system tracks the number of lines completed the previous day, alerts for overdue lines, alerts for lines without a line cleaning schedule, and completed CIP work for assessment and cleaning frequency reschedule. Hot Spot lines are targeted for cleaning on a preventive maintenance schedule on a 3- or 6-month schedule, depending upon the history of the individual line segment.

As of May 2025, approximately 5% of the pipeline asset inventory was on a six-month preventive maintenance schedule. Mainline cleaning is performed by dedicated maintenance crews. Lines are placed in the high frequency cleaning (HFC) category if they have a history of heavy grease or root accumulation, have a history of spills, or are deemed to present a high risk of a spill based on condition assessment or cleaning results. Extra attention is given to small diameter (4" and 6") pipes, which are more prone to blockages from roots, FOG, wipes and debris.

An important aspect of the District's sewer cleaning program is the recording of cleaning results for each manhole-to-manhole pipe segment. The results provide a basis for the Operations and Maintenance Manager to modify the frequency or method of cleaning for that pipe segment to reflect current field conditions. Follow-up video inspections and/or repairs are requested as needed by the Operations and Maintenance Manager to evaluate pipe performance and the (possible) need to adjust the cleaning interval, improve the quality of cleaning and for training of District employees. A review of this data in 2024, and follow-up management actions, was the HFC line reduction initiative that reduced the six-month lines from 400 to 295 sewer mains.

The District monitors technology changes in sewer cleaning tools to identify potential additions to the standard array of tools available to District cleaning crews.

The District implements a QA/QC program. In this program, Operations Supervisors provide feedback to cleaning crews to support modification of cleaning processes, practices, techniques, and tool use to improve line cleaning quality. Feedback is generally provided in staff meetings and in one-on-one meetings with employees.

Pump Stations – The District includes nineteen (19) pump stations. All major pump stations (PS-10 through 15, which pump directly to CMSA) are checked a minimum of twice per week as well as all minor pump stations or lift stations (PS-20 through 37, which pump to short force mains (pump stations) or gravity sewers (lift stations)). Condition assessments were performed in 2013 and 2021 as part of the District's

Infrastructure Asset Management Plan (IAMP). By 2025, capital projects were completed at 4 major pump stations and 6 minor pump or lift stations based on recommendations of the IAMP.

Force Mains - Limited force main assessments were conducted as part of the IAMP. The evaluation focused on force mains comprised of welded steel or reinforced concrete cylinder pipe with significant length and flow. The force main pipes that were not assessed are relatively new, comprised of HDPE or PVC pipe, or receive flow from small pump and lift stations. The evaluation reviewed approximately 42 percent of the District's force mains by length, and 100 percent of the originally installed force main pipelines greater than 10 inches in diameter. The major force mains (FM-1, FM-2, FM-13, FM-14 and FM-33) were assessed in the 2021 IAMP update and found to have no notable defects.

Condition Assessment - The District dedicates one crew to the pipeline CCTV inspection program. The District's mainline sewer condition assessment program includes CCTV inspection of main line pipes to determine their condition and to identify cleaning issues. The CCTV inspection crew progresses through the system in an organized manner with the goal of inspecting the system on prescribed, performance-based intervals. Generally, pipes are inspected on a 12-year interval, Grade 4 structural defects on an 8 year cycle, Grade 5 structural defects every 5 years, pipes in the root foaming program are inspected after 6 months, in house Post repair pipes within 1 year and CIP post as completed/needed. When assessing for structural conditions, cleaning is performed prior to inspection to improve visibility, helping to ensure detection of the smallest defects. When assessing for maintenance defects, cleaning is not performed prior to cleaning so the full extent of the conditions can be observed. The District utilizes the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP), to grade all defects discovered.

The District also follows up all sewer spills with video inspections. If a spill resulted from a gravity main structural defect, in most cases, depending upon the video results, repairs or replacements are generally made within one month after the spill (and follow-up investigation thereof) to prevent the defect in question from leading to a second spill.

Manhole Inspections - The District has limited information on the condition of manholes and other structures and typically collects this information during the CCTV inspection work using visual inspection methods. Crew members are developing a simplified manhole inspection form that incorporates relevant aspects of the Manhole Assessment and Certification Program (MACP) approach. The District most commonly assesses the condition of the manholes and other structures using District field crews and visual inspection methods during its system-wide sewer cleaning.

Easement Maintenance – The District performs pre-emptive easement clearing prior to maintenance activities to help ensure safety of staff and adequate access.

Creek Crossings – The District has identified over 300 gravity main creek crossings and inspects each on a two-year interval. The inspection includes a visual site inspection and a CCTV inspection of the pipes. This allows the District to address any issues in a pre-emptive manner, reducing the likelihood of a failure.

5. Design and Performance Provisions

5.1. Updated Design Criteria/Construction Standards/Specifications

WDR REQUIREMENTS

Att. D-1.1 (pg. D-5)

Updated design criteria, and construction standards and specifications, for the construction, installation, repair, and rehabilitation of existing and proposed system infrastructure components, including but not limited to pipelines, pump stations, and other system appurtenances. If existing design criteria and construction standards are deficient to address the necessary component-specific hydraulic capacity as specified in section 8 (System Evaluation, Capacity Assurance and Capital Improvements) of this Attachment, the procedures must include component-specific evaluation of the design criteria.

COMPLIANCE

The District maintains [Standard Specifications, Drawings and Approved Materials](#) (Standards), last updated in 2020.

Criteria for the design of new sewer lines, manholes and private laterals and cleanouts are detailed in Section 4 of the District’s Standards. Criteria include design flows, pipe materials, minimum pipe sizes and slopes, pipe depths and clearance with other utilities, and required fittings.

Detailed technical requirements for pipe materials and appurtenances are included in the Technical Specifications (TS), Division 15 of the Standards. Also included are criteria for the construction of new sewer lines and force mains. This information includes trench widths, pipe jointing, connections to existing systems, and trenchless installations.

EFFECTIVENESS

The District utilizes the following Key Performance Indicators for measuring effectiveness of this Element:

- Is plan checking QA/QC processes helping to ensure adherence to the standards?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party			
			GM	OMM	OMS	ENG
5.1.1	Ensure all project plans are approved in accordance with the District’s Standard Specifications and Details.	Each Project	X			X
5.1.2	Verify design standards are adequate and consistent with current standards of practice.	2025	X			X
5.1.3	Verify hydraulic model previously completed is adequate and consistent with current standards of practice	2030	X			X

5.2. Procedures and Standards

WDR REQUIREMENTS

Att. D-1.1 (pg. D-5)

Procedures, and standards for the inspection and testing of newly constructed, newly installed, repaired, and rehabilitated system pipelines, pumps, and other equipment and appurtenances.

COMPLIANCE

Requirements for the preparation, submittal, and approval of plans and specifications are described in Section 5 of the District’s Standards. All new construction plans are required to be prepared by a registered civil engineer and submitted to the District for review and approval prior to Board approval and permit issuance. The District has two full time inspectors and also uses outside contract forces to monitor the construction of CIP projects and customer’s service installations to ensure compliance with the District’s specifications. All District and private projects must be tested according to the requirements outlined in the specifications prior to consideration for District acceptance. In addition, record drawings of all final project elements must be submitted and approved by District staff prior to final acceptance of any project on District infrastructure.

Criteria for testing and inspecting of new and rehabilitated sewers and force mains are detailed in TS Division 2 of the District’s [Standards](#). This section describes water tests, air tests, infiltration tests, deflection tests, cleaning and television inspection.

EFFECTIVENESS

The District utilizes the following Key Performance Indicators for measuring effectiveness of this Element:

- Were any design or installation deficiencies found during warranty inspections?
- Are deviations from standard procedures and/or specs, testing, etc., justified and documented?
- Does the District stay abreast of industry design standards and technical advances in the industry?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party			
			GM	OMM	OMS	ENG
5.2.1	Verify inspection procedures are adequate and consistent with current standards of practice	2025	X			X

RESILIENCE

Resilience is addressed for Element 5 by:

- Staying abreast of industry trends and standards.
- Performing warranty inspections of newly installed or repaired assets to evaluate design and installation practices.
- Evaluating as-built changes for trends and areas for design and performance improvements.

APPENDIX 5 INCLUSIONS:

- None

6. Spill Emergency Response Plan

WDR REQUIREMENTS

Att. D-1.1 (pg. D-6)

The Plan must include an up-to-date Spill Emergency Response Plan to ensure prompt detection and response to spills to reduce spill volumes and collect information for prevention of future spills. The Spill Emergency Response Plan must include procedures to:

- *Notify primary responders, appropriate local officials, and appropriate regulatory agencies of a spill in a timely manner;*
- *Notify other potentially affected entities (for example, health agencies, water suppliers, etc.) of spills that potentially affect public health or reach waters of the State;*
- *Comply with the notification, monitoring and reporting requirements of this General Order, State law and regulations, and applicable Regional Water Board Orders;*
- *Ensure that appropriate staff and contractors implement the Spill Emergency Response Plan and are appropriately trained;*
- *Address emergency system operations, traffic control and other necessary response activities;*
- *Contain a spill and prevent/minimize discharge to waters of the State or any drainage conveyance system;*
- *Minimize and remediate public health impacts and adverse impacts on beneficial uses of waters of the State;*
- *Remove sewage from the drainage conveyance system;*
- *Clean the spill area and drainage conveyance system in a manner that does not inadvertently impact beneficial uses in the receiving waters;*
- *Implement technologies, practices, equipment, and interagency coordination to expedite spill containment and recovery;*
- *Implement pre-planned coordination and collaboration with storm drain agencies and other utility agencies/departments prior, during, and after a spill event;*
- *Conduct post-spill assessments of spill response activities;*
- *Document and report spill events as required in this General Order; and*
- *Annually, review and assess effectiveness of the Spill Emergency Response Plan, and update the Plan as needed.*

COMPLIANCE

The District's [Spill Emergency Response Plan \(SERP\)](#) is a stand-alone document that contains all the key elements necessary for an appropriate Spill response: notification, emergency incident response, reporting, and impact mitigation. The SERP, prepared by DKF Solutions Group, meets the requirements of the State Water Resources Control Board's reissued Waste Discharge Requirements (Order WQ-2022-0103-DWQ), which became effective on June 5, 2023. Initial training has been provided to affected staff and refresher training is conducted annually.

EFFECTIVENESS

The District utilizes the following Key Performance Indicators for measuring effectiveness of this Element:

- Have staff spill response efforts helped to prevent the discharge of sewage to surface waters?
- Do post-spill assessments indicate staff are following the procedures outlined in the SERP?
- Is SERP training effective and trainees demonstrating adequate knowledge and abilities?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party			
			GM	OMM	OMS	ENG
6.1	Perform SERP training including practice drills.	Annually		X	X	
6.2	Review Post Spill Assessments to ensure adherence and to indemnify any trends that should be addressed	Annually		X	X	

RESILIENCE

Resilience is addressed for Element 6 by:

- Multiple staff are trained to respond to spill events
- Post-spill assessments are conducted to evaluate staff adherence to the SERP and to identify areas for improvement.
- Data collection forms direct staff to collect all the required data to be submitted to CIWQS and are designed as a guide to a proper spill event response.
- The District employees several different spill volume estimation methods to account for different circumstances.

APPENDIX 6 INCLUSIONS:

- None

7. Sewer Pipe Blockage Program

WDR REQUIREMENTS

Att. D-7 (pg. D-7)

The Sewer System Management Plan must include procedures for the evaluation of the Enrollee's service area to determine whether a sewer pipe blockage control program is needed to control fats, oils, grease, rags and debris. If the Enrollee determines that a program is not needed, the Enrollee shall provide justification in its Plan for why a program is not needed. The procedures must include, at minimum:

- *An implementation plan and schedule for a public education and outreach program that promotes proper disposal of pipe-blocking substances;*
- *A plan and schedule for the disposal of pipe-blocking substances generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of substances generated within a sanitary sewer system service area;*
- *The legal authority to prohibit discharges to the system and identify measures to prevent spills and blockages.*
- *Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, best management practices requirements, recordkeeping and reporting requirements;*
- *Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the fats, oils, and grease ordinance;*
- *An identification of sanitary sewer system sections subject to fats, oils, and grease blockages and establishment of a cleaning schedule for each section; and*
- *Implementation of source control measures for all sources of fats, oils, and grease reaching the sanitary sewer system for each section identified above.*

COMPLIANCE

The Central Marin Sanitation Agency (CMSA) implements the FOG source control program by contract, which includes regional FOG public education outreach program. See [CMSA FOG Control Program Agreement](#) for details.

In addition to this, the District public outreach efforts, which are more targeted, include messaging in the General Manager's monthly bulletin, which is distributed on the social media platform, Nextdoor, advertisements about FOG, wipes, drugs and spill reporting on cable TV, a presence on YouTube, door hangers for FOG, other blockages, easements, and latex glove disposal. The District displays banners in strategic and high traffic areas at its pump stations with messages such as "Fight FOG," and "Don't Flush Wipes."

The District utilizes root foaming as a small part of its sewer pipe blockage control plan, targeting lines that have historical CCTV data of heavy roots and are difficult to access for mechanical root control. Staff observations of debris capture from line cleaning also contributes to the root foaming work as it gives key indicators into the root mass loading within the pipe, this gives indication of the need for pipe assessment using CCTV for scheduling root abatement.

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The district utilizes the supervisor review function integrated within the CMMS to notify supervisory staff via email of field observations in need of immediate response such as heavy roots, grease, pipeline breaks/voids or debris such as heavy grit or rock.

The District implements a Lateral Enforcement Program through its Private Sewer Lateral Ordinance (Ordinance 100, Notice of Defective Lateral) to send notices to owners with defective lateral connections and lateral root infiltration into the public sewer mains. Voluntary actions by private property owners to repair these defects provides the district with remediation required to keep roots, dirt, rock, broken pipe, and vermin from entering the system and creating a blockage.

The District maintains a variety of information on the District's website to engage the public in preventing sewer blockages.

- [Wipes Clog Pipes](#)
- [Fats, Oils & Grease](#)
- [Don't Flush Gloves](#)
- [Don't Flush Meds and Hazardous Waste](#)
- [Sewer Pipe Maintenance and Sump Pumps](#)
- [Sewer Utility Easements](#)
- [For Sewer Spills Call Us First](#)
- [Sewer Lateral Repairs and Grant and Loan Program](#)

Pipe blocking substances collected during maintenance activities are disposed of at the CMSA treatment plant, daily or as needed. CMSA currently accepts grease hauled from restaurant grease traps within their service area.

The District's [Sanitary Code, Ordinance No. 26 - Use of Public Sewer](#) provides the following legal authority:

- Prohibit discharges to the collection system
 - Article VI, Sections 601, 602
- Require grease removal devices and proper maintenance of the devices for FOG producing facilities.
 - Article VI, Sections 603, 604
- Inspect grease producing facilities
 - Article II, Section 210

The District has identified areas within the collection system that are subject to grease build up and mitigates these circumstances by employing a high-frequency cleaning program to manage the grease and maintain flows.

The District has approximately 85 Food Service Establishments (FSEs). As stated previously, CMSA implements the source control program within the District's service area. The District receives monthly reports of inspections, finding and enforcement actions, if any. Upon discovery of excessive grease in the

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system, District staff utilizing the supervisor review function notify supervisory staff who communicates and coordinates with CMSA for investigation and resolution.

EFFECTIVENESS

The District utilizes the following Key Performance Indicators for measuring effectiveness of this Element:

- Have there been any blockages/spills from any identified problem area?
- Is the District receiving feedback on public outreach efforts?
- Is the debris and other sewage solids collected during cleaning activities being disposed of appropriately?
- Have there been spills due to excessive fats, oil, grease, roots, or non-dispersible wipes discovered in the sewer system during the audit period?
- Are there repeat offenders among FSEs?
- Are enforcement trends decreasing?
- Are Source Control and Collection staff included in the plan check process?

IMPLEMENTATION PLAN/SCHEDULE

No	Plan	Schedule	Responsible Party			
			GM	OMM	OMS	ENG
7.1	Review/evaluate enforcement and inspection findings and implement changes as necessary.	Annually		X	X	
7.2	Review spill rates and causes and make changes to maintenance programs, as necessary.	Annually		X	X	

RESILIENCE

Resilience is addressed for Element 7 by:

- Inspection of select assets directly downstream of grease producing businesses to ensure source control is effective.
- Residential FOG outreach and education program.
- Performance of regular assessments of system assets to monitor performance.
- QA/QA process for evaluating pipe cleaning effectiveness.
- Daily disposal of pipe blocking materials retrieved during maintenance activities.
- Utilization of root foaming to decrease pipe blockage
- Supervisor review function to report blockage materials immediately for source control, CCTV inspection, root control, system cleaning and debris capture.
- Sewer lateral ordinance requires repairs from owners of private sewer laterals to keep roots, dirt, rock, broken pipe from entering the system causing blockages.

APPENDIX 7 INCLUSIONS:

- None

8. System Evaluation, Capacity Assurance, Capital Improvements

WDR REQUIREMENTS

Att. D-8 (pgs. D-7/D-8)

The Plan must include procedures and activities for:

- *Routine evaluation and assessment of system conditions.*
- *Capacity assessment and design criteria.*
- *Prioritization of corrective actions; and*
- *A capital improvement plan.*

8.1. System Evaluation and Condition Assessment

WDR REQUIREMENTS

Att. D-8 (pgs. D-7/D-8)

The Agency SSMP must include procedures to:

- *Evaluate the sanitary sewer system assets utilizing the best practices and technologies available.*
- *Identify and justify the amount (percentage) of its system for its condition to be assessed each year.*
- *Prioritize the condition assessment of system areas that:*
 - *Are located in or within the vicinity of surface waters, steep terrain, high groundwater elevations, and environmentally sensitive areas.*
 - *Are within the vicinity of a receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List.*
 - *Assess the system conditions using visual observations, video surveillance and/or other comparable system inspection methods.*
- *Utilize observations/evidence of system conditions that may contribute to exiting of sewage from the system which can reasonably be expected to discharge into a water of the State.*
- *Maintain documents and recordkeeping of system evaluation and condition assessment inspections and activities; and*
- *Identify system assets vulnerable to direct and indirect impacts of climate change, including but not limited to: (a) sea level rise, (b) flooding and/or erosion due to increased storm volumes, frequency, and/or intensity; (c) wildfires; and (4) increased power disruptions.*

COMPLIANCE

The assessment of a collection system includes every component of the District's collection system, including pipelines, appurtenances, manholes, and pump stations. It is of key importance to regularly perform asset condition assessments and a condition baseline so conditions can be monitored over time.

The District performs regular assessments of gravity mains, utilizing CCTV equipment, visual assessments of pump stations and points of discharge of force mains, and manholes. Assessments are performed in a systematic manner with standard operating procedures (SOPs) to ensure consistency and increase efficiency. All assets are routinely evaluated, helping the District understand its asset conditions to inform maintenance priority actions and thereby achieve the goal of properly maintaining the system. In addition, the District utilizes Smart Cover flow level monitoring devices to help evaluate system performance and for advanced notification of potential failures. The District is utilizing Panorama pipe scanning (3D imaging) camera technology during manhole inspections. Panorama® is a 360 degree CCTV video (3D imaging) that uses software to render a post "video" where the reviewer has a 360 degree view.

Sewer facilities located in easements, especially those located in unimproved and difficult-to-access areas, usually require more time and effort to conduct visual inspections.

The assessment of pipeline condition is the most common condition assessment responsibility of the District. The [2021 Infrastructure Asset Management Plan \(IAMP\)](#) included a pipe deterioration analysis for hundreds of gravity main defects, where specific known defects were compared over time, and this informed the [Pipe Structural Reinspection and Repair \(RR\) Plan](#).

The RR Plan produced recommendations for pipe assessment as follows:

- Structural Pipe Defect rating 5 – reinspection in 4-year cycle
- Structural Pipe Defect rating 4 – reinspection in 8-year cycle
- All other pipes – reinspection in 12-year cycle
- Creek Crossings are inspected on a 2-year cycle

Based on the deterioration analysis the District can adjust the gravity main reinspection and rehabilitation process to focus on defect types that have the most potential to deteriorate and reinspect the system at longer intervals.

Most of the District's assets assessed during the [IAMP](#) update were determined to be moderate to low risk based on the various risk model calculations for each asset type. Risk assessments were performed for gravity mains, creek crossings, manholes, lift stations, and force mains. These are updated every two years with a data model run that includes new condition assessment information and incorporates capital and in-house asset replacement activities.

The District has identified assets within close proximity to surface water and have assigned a higher risk factor to these assets due to consequence of failure. Over 300 creek crossings have been identified and assigned an appropriate risk factor. See [IAMP](#), page 15 for more detail on creek crossings. It should be noted, the District's service area experiences higher than average annual rainfall that other sewer agencies in the Marin County and the greater Bay Area. The District receives an average of 45 inches of rainfall per year at the higher elevations and 32 inches per year at the lower elevations. There are numerous seasonal and perennial waterways that traverse the service area and terminate in Corte Madera Creek, which is the

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main drainage from the District’s service area to the San Francisco Bay which places many sewer facilities within proximity to surface water.

The District is not aware of any exiting of sewage from the collection system and continuously inspects and evaluates for defects such as cracks, separated joints, and infiltration. Significant findings are addressed in a timely manner through the supervisor review function in the CMMS.

Inspection and assessment activities are documented in the District’s CMMS. All collected data is used for the purpose of documenting maintenance efforts, evaluating system performance, and making maintenance and corrective action decisions today and into the future.

Aside from lift station improvements recently constructed to elevate electrical equipment out of the projected sea level rise floodplain, and responding to emergencies during higher-than-predicted intensity storms, the District has determined that the collection system is not especially impacted by climate change impacts, as detailed in the WDR requirements listed above. The District maintains back-up power for its pump stations and headquarters which guard against extended power outages that may accompany climate change and wildfires. The potential for these impacts will be periodically monitored, at least every three years during the SSMP audit cycle, so the District will be in a position to anticipate possible impacts and be prepared to act, as needed.

EFFECTIVENESS

The District utilizes the following Key Performance Indicators for measuring effectiveness of this Element:

- Has the District maintained its schedule for and is data being reviewed in a timely manner?
 - CCTV Gravity Mains
 - Laterals
 - Manholes
 - Pump Stations
- Are inspection efforts discovering deficiencies in a timely manner?
- Are maintenance and inspection activities being properly documented?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party			
			GM	OMM	OMS	ENG
8.1.1	Review/evaluate enforcement and inspection findings and implement changes as necessary.	Annually		X	X	
8.1.2	Review spill rates and causes and make changes to maintenance programs, as necessary.	Annually		X	X	
8.1.3	Periodically convene to discuss any issues that may result from climate change (i.e., sea level rise, low flows from drought, historically intense rainfall and runoff, or wildfires).	Annually	X	X	X	X

8.2. Capacity Assessment and Design Criteria

WDR REQUIREMENTS

Att. D-8 (pgs. D-7/D-8)

The Plan must include procedures to identify system components that are experiencing or contributing to spills caused by hydraulic deficiency and/or limited capacity, including procedures to identify the appropriate hydraulic capacity of key system elements for:

- *Dry-weather peak flow conditions that cause or contributes to spill events;*
- *The appropriate design storm(s) or wet weather events that causes or contributes to spill events.*
- *The capacity of key system components; and*
- *Identify the major sources that contribute to the peak flows associated with sewer spills.*

The capacity assessment must consider:

- *Data from existing system condition assessments, system inspections, system audits, spill history, and other available information.*
- *Capacity of flood-prone systems subject to increased infiltration and inflow, under normal local and regional storm conditions.*
- *Capacity of systems subject to increased infiltration and inflow due to larger and/or higher-intensity storm events as a result of climate change.*
- *Increases of erosive forces in canyons and streams near underground and above-ground system components due to larger and/or higher-intensity storm events;*
- *Capacity of major system elements to accommodate dry weather peak flow conditions, and updated design storm and wet weather events; and*
- *Necessary redundancy in pumping and storage capacities.*

COMPLIANCE

The District completed a Wastewater Collection System Capacity Evaluation in 2023 which updated hydraulic modeling efforts of 2006, 2014 and 2020. The evaluation focused on both dry and wet weather conditions and included pump station capacity and inflow and infiltration assessments. Both a 5-year design storm and a 10-year design storm are considered in this analysis. In general, the 10-year design storm provided the basis for sizing of future facilities, and the 5-year design storm provides some additional information on the frequency and likelihood of surcharge and system capacity exceedances.

As is common with collection system modeling, the RVSD hydraulic model is limited to the larger diameter gravity mains and does not include most of the smaller collection gravity mains. The wastewater hydraulic model also includes most of the lift stations and force mains, and it does contain a limited number of small diameter collection gravity mains that are necessary for evaluating hydraulic connectivity.

EFFECTIVENESS

The District utilizes the following Key Performance Indicators for measuring effectiveness of this Element:

- Number of capacity-related spills or surcharge condition during the audit period?
- Has the system responded to rain events as indicated by the hydraulic model?
- Has there been any changes to zoning designations (residential, commercial, industrial)?

IMPLEMENTATION PLAN/SCHEDULE

No	Plan	Schedule	Responsible Party			
			GM	OMM	OMS	ENG
8.2.1	Monitor/Evaluate significant rain events to see if they exceed the design storm in the hydraulic model.	Each significant rain event	X	X	X	X
8.2.2	Identify and monitor flood-prone areas susceptible to erosion from rain events	After each significant rain event	X	X	X	X
8.2.3	Monitor flows in each basin and update the hydraulic model	Conduct flow monitoring and hydraulic modeling study approximately every eight years	X			X

8.3. Prioritization of Corrective Action

WDR REQUIREMENTS

[Att. D-8 \(pgs. D-7/D-8\)](#)

The findings of the condition assessments and capacity assessments must be used to prioritize corrective actions. Prioritization must consider the severity of the consequences of potential spills.

COMPLIANCE

The RVSD [Infrastructure Asset Management Plan](#) published in 2021 is based on a risk model and is a forward-looking, data driven management program that was used to assess current system conditions, project future performance, assign risk (likelihood of failure (70%) and consequence of failure (30%) and allow for a prioritized and predictive approach to maintaining the collection system. The risk model was updated in 2023 and is scheduled to be updated every two years, as asset risk scores change with repair and rehabilitation of the assets. These findings as well as post-spill corrective actions and condition assessment findings are prioritized in the Capital Improvement Program (CIP).

The 2023 [Wastewater Collection System Capacity Evaluation](#) is an update to the [2006 System Hydraulic Evaluation and Capacity Assurance Plan \(SHECAP\)](#). Three existing capacity projects were evaluated using the 2021 recalibrated hydraulic model and prioritized based on risk of surcharging. Eight additional capacity issues were identified and will be addressed in a prioritized manner.

EFFECTIVENESS

The District utilizes the following Key Performance Indicators for measuring effectiveness of this Element:

- Has the District adhered to its system evaluation/condition assessment schedule?
- Has the District adhered to its prioritization/corrective procedures for sewer repair and capacity improvement projects?
- Have projects been completed before deficiencies caused failures?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party			
			GM	OMM	OMS	ENG
8.3.1	Utilize all available data for prioritizing corrective actions considering probability and consequences of potential spills.	Each CIP Update		X	X	X
8.3.2	Maintain documents and recordkeeping of system evaluation and condition assessment inspections and activities.	Continuously		X	X	X

8.4. Capital Improvement Plan

WDR REQUIREMENTS

Att. D-8 (pgs. D-7/D-8)

The capital improvement plan must include the following items:

- *Project schedules include completion dates for all portions of the capital improvement program.*
- *Internal and external project funding sources for each project; and*
- *Joint coordination between operation and maintenance staff, and engineering staff/consultants during planning, design, and construction of capital improvement projects; and Interagency coordination with other impacted utility agencies.*

COMPLIANCE

The RVSD rolling 10-year Capital Improvement Plan (CIP), is published every May as part of the annual budget and consists of prioritized construction projects to replace outdated system infrastructure and enhance system reliability. Sometimes projects are added to coordinate with the five local government jurisdictions and other utilities, for instance in advance of pavement moratoria. The priorities of the CIP are guided by higher risk assets identified in the IAMP and associated data model updates, as well as Operations and Maintenance (O&M) priorities and post-spill correction reports. O&M priorities include rehabilitating certain high frequency cleaning (HFC) or Hotspot lines, as well as easement lines that have difficult access requirements. Project sheets included in each annual budget describe the project schedules, funding sources, annual project budgets, completion dates, project details, applicable plans, and related projects of other agencies where applicable.

EFFECTIVENESS

The District utilizes the following Key Performance Indicators for measuring effectiveness of this Element:

- Has the District’s capital improvement plan schedule been adhered to?
- Is the capital improvement plan implementing rehabilitation of the IAMP’s highest risk assets?
- Is the capital improvement plan addressing O&M priorities to improve efficiency?
- Have post-spill corrective report commitments been implemented in a timely manner?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party			
			GM	OMM	OMS	ENG
8.4.1	Hold regular coordination meetings, with all parties, to help keep the projects on track and resolve issues that may arise in a timely manner.	Annually	X	X	X	X
8.4.2	For schedules that are not kept, justify and document the reason	Each Delayed Project	X			X

RESILIENCE

Resilience is addressed for Element 7 by:

- Is there an annual review of the Capital Improvement Plan by all appropriate individuals including both Engineering and Operations?

APPENDIX 8 INCLUSIONS

- None

9. Monitoring, Measurement, and Program Modifications

WDR REQUIREMENTS

Att. D-9 (pg. D-9)

The Agency SSMP must include an Adaptive Management section that addresses Plan implementation effectiveness and the steps for necessary Plan improvement, including:

- *Maintaining relevant information, including audit findings, to establish and prioritize appropriate SSMP activities.*
- *Monitoring the implementation and measuring the effectiveness of each element.*
- *Assessing the success of the preventive operation and maintenance activities.*
- *Updating SSMP procedures and activities, as appropriate, based on results of monitoring and performance evaluations; and*
- *Identifying and illustrating spill trends, including spill frequency, locations, and estimated volumes.*

COMPLIANCE

The above requirements are addressed in order below:

- a. The District maintains accurate and relevant inspection and maintenance records for the collection system. Much of the documentation today is maintained electronically, which allows for ease of access and analysis. The District relies on this information to make sound decisions and prioritize activities when dealing with the routine and the unexpected.
- b. Monitoring of the District's SSMP focuses on each element in terms of its implementation and effectiveness. The SSMP has been designed to include key performance indicators (KPIs) for each element, which are used to measure effectiveness. In addition, implementation responsibilities are included for each element to help ensure the SSMP is being implemented as intended.
- c. The District assesses the success of maintenance and operation activities by ensuring activities are being performed as expected, by monitoring actual outcomes compared to intended outcomes, as well as monitoring spill trends. As an example, gravity main cleaning crews evaluate, rate and document debris collected from the cleaning process, and if there are questions about the quality of the cleaning, push cameras are used to evaluate the effectiveness after the cleaning. This information is used to help determine optimal maintenance intervals and can be a trigger to perform targeted outreach to help prevent illicit discharges from connected buildings and educate the public.
- d. The District is committed to continuous improvement and monitors and evaluates performance of work programs and SSMP elements to ensure intended outcomes are achieved while looking for areas for improvement. Although the SWRCB requires that the SSMP be updated every six years, the SSMP is considered as a dynamic document and may require updating on a more frequent basis. Routine changes to administrative information, notwithstanding, minor changes may be required to address improvements identified through the SSMP Audit or through modifications required as conditions change.
- e. The District monitors spill trends, at a minimum every three years during required audits, utilizing the CMMS database, inspection records, condition assessment information, and CIWQS data. These resources are helpful in planning and programming work, and adjusting as needed, enabling the District to be adaptive and capitalize on lessons learned.

EFFECTIVENESS

The District utilizes the following Key Performance Indicators for measuring effectiveness of this Element:

- Are SSMP Elements being periodically evaluated for effectiveness?
- Are work activities and spill events being documented?
- Has a plan and schedule been established to address audit findings/deficiencies from the last audit?
- Is Trend Analysis being performed on spill causes?
- Have work programs been assessed and updated as necessary?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party			
			GM	OMM	OMS	ENG
9.1	Assess work programs to ensure outcomes are as intended	Annually		X	X	
9.2	Ensure updates to work programs and the SSMP based on assessments.	As Needed		X	X	
9.3	Monitor and evaluate spill trends. Document efforts.	Annually	X	X	X	X

RESILIENCE

Resilience is addressed for Element 9 by:

- Development of key performance indicators to measure effectiveness of the Sewer System Management Plan.
- Performing periodic reviews of the Sewer System Management Plan to help ensure the plan is being properly implemented.
- Developing and adhering to a timeline to correct deficiencies found during the audit process.
- Documenting work program outputs and outcomes in the annual performance metrics report and annual capital program report.
- Periodically evaluating work programs to help ensure effectiveness.

APPENDIX 9 INCLUSIONS:

- None

10. Internal Audits

WDR REQUIREMENTS

Att. D-10 (pg. D-10)

The Agency SSMP shall include internal audit procedures, appropriate to the size and performance of the system, for the Enrollee to comply with section 5.4 (Sewer System Management Plan Audits) of this General Order.

COMPLIANCE

The District completed its [SSMP Audit for 2021-2024](#) in January 2025 and will complete audits every three (3) years moving forward. The objective of the audit is to evaluate compliance, implementation and effectiveness of the SSMP.

Additionally, the SSMP includes a description of how the District will comply with the requirements of each Element. The audit review includes an evaluation to determine if compliance has been met.

Implementation is evaluated by determining if the District is executing the SSMP as stated.

Effectiveness is evaluated by using key performance indicators, which have been developed specifically for each element.

An additional evaluation is performed to comply with Specifications 5.6 addressing resilience.

Resilience indicators have been developed for each element, and they serve to demonstrate how resilience is built into the SSMP and inspection, maintenance and spill response activities.

Any deficiencies discovered through the audit process are noted and a plan and schedule to implement corrective measures are established.

EFFECTIVENESS

The Agency utilizes the following Key Performance Indicators for measuring effectiveness of this Element:

- Have audits been performed as required?
- Have the audits assessed compliance, implementation, and effectiveness?
- Have deficiencies been identified?
- Has a plan and schedule to rectify the deficiencies been established?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party			
			GM	OMM	OMS	ENG
10.1	Schedule audits in advance of due dates to ensure adequate time to complete. Agency has 6 months to complete the audit from the end of the audit period.	Begin end of audit period		X	X	
10.2	Ensure a plan and schedule is developed to address deficiencies.	Once the Audit is completed	X	X	X	

RESILIENCE

Resilience is addressed for Element 10 by:

- Periodically evaluate key performance indicators during the audit period to assess effectiveness and make corrections, if necessary, prior to the audit.
- Evaluate previous audit to ensure deficiencies have been rectified.
- Calendar the audit due dates and complete the audit on time.

APPENDIX 10 INCLUSIONS:

- None

11. Communication Program

WDR REQUIREMENTS

Att. D-11 (pg. D-10)

The Plan must include procedures for the Enrollee to communicate with:

- a. *The public for:*
 - *Spills and discharges resulting in closures of public areas, or that enter a source of drinking water, and*
 - *The development, implementation, and update of its Plan, including opportunities for public input to Plan implementation and updates.*
- b. *Owners/operators of systems that connect into the Enrollee's system, including satellite systems, for:*
 - *System operation, maintenance, and capital improvement-related activities.*

COMPLIANCE

- a. When the District experiences a spill, it is standard procedure to secure the affected area and keep the public away. This is generally done using barricades, cones and caution tape. Should the District experience a spill that may require closure of public areas, signs are immediately placed indicating the issue and providing contact information. Staff will remain on site to provide an additional safety factor until appropriate authorities respond and direct otherwise. In all cases, the District will follow the advice of higher authorities, such as the Marin County Environmental Health department and other regulatory authorities.

There are opportunities for stakeholders and the public to participate and provide input into the development and update of the District SSMP. The SSMP is available for review on the District website under "Open Government" and at District offices, by appointment. The District website's Customer Service page prominently displays the District's phone number and address.

The District governing Board must approve the updated SSMP every six years during a regular Board meeting. The agenda for these meetings are noticed to the public prior to the Board meeting and public comment opportunities are provided for each action item on the agenda.

- b. The District does not have public sewer systems connecting to its collection system.

EFFECTIVENESS

The District utilizes the following Key Performance Indicators for measuring effectiveness of this Element:

- Does the District place all Sewer System Management Plan action items on the agenda for regular board meetings?
- Does the District have signage, or other means, readily available to notify the public of environmental or public risk factors related to a sewage spill?
- Does the District perform outreach to residential and commercial customers?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party			
			GM	OMM	OMS	ENG
11.1	Ensure the Board of Directors approves the SSMP per schedule	Every 6 years	X	X	X	
11.2	Ensure the SSMP is posted on the District Website and the link functions properly.	Annually	X	X	X	X
11.3	Ensure Sewage Spill Warning signs are readily available to communicate with the public when necessary	Annually		x	X	

RESILIENCE

Resilience is addressed for Element 11 by:

- Use the Sewer System Management Plan as a tool to communicate to the public how the District is managing the system.
- Maintain a consistent presence in the service area by attending community events and issuing monthly newsletters or other communications to the public, including via the internet and Cable TV.
- Use public outreach materials in vicinity of sewer system locations where blockages or spills occur to help change behaviors that led to the blockages or spills (i.e., don't flush wipes, FOG, drugs, gloves or other debris).
- Make it clear and easy for the public to contact the District.

APPENDIX 11 INCLUSIONS

- None

LIST OF APPENDICIES

APPENDIX 1

None

APPENDIX 2

None

APPENDIX 3

None

APPENDIX 4

None

APPENDIX 5

None

APPENDIX 6

None

APPENDIX 7

None

APPENDIX 8

None

APPENDIX 9

None

APPENDIX 10

None

APPENDIX 11

None

APPENDIX 12

None